

## **REMARKS**

In view of the above amendments and following remarks, reconsideration of the rejections and further examination are requested. Claims 1, 2, 4 and 5 are pending with claim 1 being independent. No new matter has been added.

### ***Rejections Under 35 U.S.C. §112, first paragraph***

Claim 5 has been rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In particular, the Examiners states that there is no support in the original specification that the concentration of NH<sub>3</sub> before decomposition in the furnace affects the content of nitrogen in steel.

Applicants respectfully disagree and submit that the term “the concentration of NH<sub>3</sub> before decomposition in the furnace affects the nitrogen content” is supported by Example III discussed in the original specification. In particular, the original specification, on page 27, lines 22-25, states that the “Comparative example 3 corresponds to a sample that was treated by the same process as in Example of the present invention except it contains a higher level of nitrogen.”

Additionally, the specification has been amended to support the specific language recited in the claim. Applicants submit that this is not new matter, since one of ordinary skill in the art would understand that this subject matter was present in the original specification based on the description in page 27, line 16 - page 28, line 19. Therefore, Applicants respectfully request that this rejection be withdrawn.

### ***Rejections Under 35 U.S.C. §103(a)***

Claims 1, 2, 4 and 5 have been rejected under 35 U.S.C. 103(a) as being unpatentable under Ohki (US 2003/0123769) in view of Okita et al. (US 5,672,014) in further in view of Higgins (“The Surface Hardening of Steels,” Ch. 19, *Engineering Metallurgy, Part I: Applied Physical Metallurgy*).

Applicants respectfully traverse this rejection and submit that the claims as currently pending are allowable over the cited prior art. Claim 1 recites, among other things, a bearing including an inner ring, an outer ring, and a plurality of rolling elements, wherein at least one member of the inner ring, the outer ring, and the rolling elements is formed from steel alloyed

with Ti being present up to 0.003% by weight, and the member having a nitrogen-enriched layer formed thereon, the nitrogen-enriched layer having a nitrogen content of 0.1% to 0.7%.

The present invention, as recited in claim 1, is a combination of a fine microstructure technique and a nitrogen-enriched layer. *See* paragraphs [0023], [0088] and [0096] of the present application.

Applicants submit that the cited prior art fails to disclose or render obvious such a bearing. In particular, Ohki discloses a heat treated bearing formed from steel, which includes some of the same materials (although in different quantities) as recited in claim 1. However, as recognized by the Examiner, Ohki fails to disclose a nitrogen-enriched layer having a nitrogen content of 0.1% to 0.7%. The Examiner suggests that the carbonitriding process taught by Ohki (Fig. 2) appears to be identical or substantially identical to that disclosed in the instant specification. *See* the December 18, 2009 Office Action Pg. 7. Additionally, the Examiner states that Higgins provides evidence demonstrating that it is well known in the art to manipulate factors important to the carbonitriding process to achieve a desired nitrogen content in the surface of carbonitrided steels; thus, the Examiner concludes that the prior art renders claim 1 obvious.

Applicants respectfully disagree. Figure 2 in Ohki and the figures of this application merely show heat treatment patterns. Applicants contend that, even assuming that Ohki discloses an identical or a substantially identical heat treatment pattern, such a disclosure would not necessarily result in the same nitrogen content. With respect to the Examiner's assertion that Higgins provides evidence that factors important to the carbonitriding process may be manipulated, the Examiner has still failed to show that one of ordinary skill in the art would have manipulated these factors to arrive at the present invention. It is incumbent on the Examiner to prove that the extrinsic evidence makes "clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. ... The mere fact that a certain thing may result from a given set of circumstances is not sufficient." *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999). MPEP §2163.07. The Examiner has merely provided evidence that a certain thing (i.e., nitrogen content) may result from a given set of circumstances (i.e., manipulating factors in the carbonitriding process). As Applicants have stated previously, evidence that a substantially identical heat treatment pattern may not result in the same nitrogen content is illustrated on page

27, lines 22-25 of the original specification, which states that "Comparative Example 3 corresponds to a sample that was treated by the same process as in Example of the present invention except that it contains higher level of nitrogen." Nitrogen content of the steel being carbonitrided depends upon the concentration of NH<sub>3</sub> before decomposition in the furnace, and thus, Applicants submit that the cited prior art fails to disclose the nitrogen content recited in claim 1 of the present application.

Additionally, since rejections on obviousness grounds cannot be sustained by mere conclusory statements, i.e., there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *See KSR International Co. v. Teleflex Inc.* 550 U.S. 398; 127 S. Ct. 1727 (2007). "A patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art." *KSR International Co. v. Teleflex Inc.* 550 U.S. 398; 127 S. Ct. 1727 (2007). Although the Examiner suggests that the proposed combination provides the appropriate motivation to combine the cited references, the Applicants submit that the Examiner is engaging in improper hindsight reasoning. "A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *Graham*, 383 U.S., at 36, 86 S. Ct. 684, 15 L. Ed. 2d 545 (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "guard against slipping into the use of hindsight" (quoting *Monroe Auto Equipment Co. v. Heckethorn Mfg. & Supply Co.*, 332 F.2d 406, 412 (CA6 1964)))." *KSR International Co. v. Teleflex Inc.* 550 U.S. 398; 127 S. Ct. 1727 (2007).

Therefore, Applicants submit that the Examiner is clearly biased by and is using the present application specification as a roadmap to pick the claim elements out of the prior art and piecemeal the claim elements together in an attempt to render independent claim 1 of the present application obvious. Applicants submit that for at least these reasons independent claim 1 and its dependent claims are allowable over the cited prior art.

### ***Conclusion***

In view of the foregoing amendments and remarks, all of the claims now pending in this application are believed to be in condition for allowance. Reconsideration and favorable action are respectfully solicited.

Should the Examiner believe there are any remaining issues that must be resolved before this application can be allowed, it is respectfully requested that the Examiner contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

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